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Type 2 diabetes mellitus is associated with disruptions as a function of metabolic control

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Background and aims Sleep disturbances may be an independent risk factor for glucose intolerance and, in type 2 diabetes mellitus (T2DM), sleep disruption was shown to correlate with metabolic control. We aimed at evaluating sleep quality in non-obese T2DM patients treated with oral agents and without complications. M**ethods** Sleep recording was performed in 25 middle-aged T2DM patients and 18 age- and sex-matched healthy controls subjects (CS) by wrist actigraphy (Actiwatch, MiniMitterCo, USA) on three consecutive working days in free living conditions. Data were analysed using ActiwareSleepSoftware. **Results** There were no significant differences between T2DM and CS in terms of time in bed (mean±SD 7h40'±0h53' vs 7h36'±1h06'), actual sleep time (6h25'±0h52' vs 6h36'±1h03'), sleep efficiency (83.77±6.92 vs 86.81±4.19%) and sleep latency (11'±11' vs 09'±07'). However, T2DM patients showed lower ($p<0.05$) actual sleep percentage (88.77±4.56 vs 91.27±3.15%), higher ($p<0.01$) fragmentation index (21.10±8.14 vs 15.26±3.90), higher ($p<0.05$) total activity score during night-time (7822±3596 vs 6339±3672) and increased ($p<0.01$) moving time percentage (11.26±5.09 vs 7.88±1.50%). In T2DM, HbA1c correlated negatively with sleep efficiency ($r=-0.624$; $p<0.01$) and actual sleep percentage ($r=-0.585$; $p<0.01$) and positively with fragmentation index ($r=0.576$; $p<0.01$), moving time percentage ($r=0.651$; $p<0.01$) and mean activity score during night-time ($r=0.493$; $p<0.05$). **Discussion** These data suggest that T2DM is associated with quantitative and qualitative sleep disruption which correlate with metabolic control, even in the absence of complications.